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AUTHOR(S):

SU, YIN-HO

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A STATISTICAL STUDY OF THE VARIOUS DISEASES IN PESCADORES ISLANDS

by

YIN-HO SU

From the Department of Orthopedic Surgery, Kyoto University Medical
School, Japan and Heimin Hospital, Taiwan
(Director : Prof. Dr. EISHI KONDO)

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I. GENERAL DESCRIPTION OF THE PESCADORES ISLANDS

The Pescadores Islands consist of 64 islets, situated to the west of Taiwan (Formosa), scattered in the middle of the Taiwan Strait, with an area of about 127 square kilometers. The population of the Pescadores was 93,874 in 1959 census. As the Tropic of Cancer passes through the middle of the Islands group, the climate is comparatively warm. The mean temperature in one year is 22.7°C ; the coolest month is February, with average temperature of 15.8°C . In "Winter time" there are violent winds. The windy days of more than 8 meters per second wind speed total 138 days, occupying more than $1/3$ of the year. The rainfall is greater in summer and humidity rate is also higher in summer. In general the air is comparatively dry.

The annual birthrate increased gradually, and on the contrary the annual death rate decreased during the past ten years. If they were compared with that of Taiwan, the death rate was higher than that of Taiwan, but the birth rate showed very little difference. The higher percentage of deaths in the Pescadores is due to the lack of doctors and medical supplies, and also to the bad environmental hygiene of these Islands.

II. SEVERAL FACTORS INFLUENCING HEALTH AND WELFARE OF PESCADORES

A. Livelihood :

In these Islands, surrounded by the sea and with so few fields, the living of the people is very poor and pitiable. As only few agricultural products are raised in these Islands, most of the people live on fishing. In the 1957 census, the fishermen numbered about twenty thousand, providing 36% of the people with work; while the farmers were only tenthous and, or 21% of the workers. Correctly speaking, however, they live partly on fishing and partly on farming, and usually the women till the fields; for this reason, the Ancylostomiasis are found more among the females than males.

B. Clothing :

As the climate is comparatively warm, the poor people of the Island are clothed simply. The older country men and women still wear the cotton clothes of old Chinese

style ; while the younger generations in city usually wear the new western styles. In winter, during the windy season, the local women wrap the face with a kerchief to protect themselves against the violent wind and the flying sand. Even in summer, the unmarried young girls wear cloth gauntlets, leggings and also a towel and kerchief covering the face, except for a slit for their eyes. Although it seems grotesque, it is useful in protecting them from the sunshine with strong ultraviolet rays, and also protects them from "catching" cold from perspiration after their hard work. Some of the fishermen work in nude, but some wear clothes dyed with betal-palm juice used in dying the fishing net. As to the sandals, with exception of some city people, the local people generally wear clogs with a rubber thong, which causes frequent Contact Dermatitis ; while "Hong Kong" foot i. e. *Trichophytia pompholyiformis*, is prevalent in main-landers who are accustomed to wearing cloth shoes. Injury and Ancylostomiasis are usually found, respectively, among fishermen and young women working with bare feet.

C. Diet :

Due to lack of fresh water supply that is indispensable to the paddie fields, rice is supplied from Taiwan to these unfertile basaltic tablelands. The only agricultural products, such as sweet potatoes, peanuts, millet and cucumbers are in such scanty amount that the poor people eat sweet-potato gruel with small dried fish or peanuts which they have on hand as the main meal and occasionally seaweed and perwinkles as the subordinate meal. The most people have quite a miserable living during winter, due to a shortage of fish. Furthermore, the vegetable and fruit supply from Taiwan is usually hindered by difficult transportation when the weather is bad during the winter. As a result, there is a frequency of Vitamin deficiency, especially Vitamin B₁ (causative of Beriberi and Polymyositis etc.) as well as general malnutrition that plays an important role in aggravating the prognosis of any other diseases. Conversely, goiters are seldom found, in virtue of sufficient iodine received from intake of abundant marine plants.

D. Dwelling :

Many of the people immigrated from the mainland. They settled down in the more fertile ravines, in small groups, which evantuated in the formation of the hamlet and later in the larger community. Thus, the architecture is somewhat akin to that of Fukien ; a U-shaped, one-stored house with two side section, which is composed of 3-5 rooms. The middle one is the parlor or dining-room where the family altar is placed ; the room to the left is for the older members, and that to the right is for the younger of the family. Within the U, is a courtyard used for drying grain, sweet potatoes, etc. The open end of the U has a low wall with a small gate, providing privacy for the family unit.

The houses are built in rather primitive ways, using coral rock, obtained from the sea ; and lime from the shell ashes mixed with sand as cementing substance. The coral rocks just obtained from the sea are partly fragile and too full of salt to be used immediately as building material. However they lose their salt content and become sturdy, especially after the horn-like projection fall off. Then after being exposed to the air for long time as walls of the fields, they can be used for buildings, strong enough to withstand the violent wind. Usually, a large family is crowded together in an oldfashioned

house with bad lighting and poor ventilation, due to the small doors and few windows.

E. Water supply and sewage disposal :

Water supply and sewage disposal, especially feces treatment, has been one of the most serious concerns, and still is an unsolved problem. In Ma-kung, though insufficient because of recent sudden increase in population, each family is supplied with tap water through a pipe leading from a water-supply tank, into which water is pumped from one of the walls, that were drilled by the Japanese while they governed the Islands. In the rural areas, on the one hand, the water supply depends completely upon a well, that easily becomes dry in case of drought ; and, on the other hand, the people drink unboiled water, due to a lack of fuel. This results in the frequent occurrence of Amebic dysentery or other gastrointestinal communicable diseases.

The sewer system in Ma-Kung although comparatively good, still needs to be improved further, because the sections were not constructed simultaneously under a comprehensive plan. Those in the rural areas are constructed only by digging a hole, resulting in many cesspools and compost piles, which are the most desirable places for the breeding of the *Culex fatigans* mosquito. Hence, there is a high incidence of Filariasis.

Garbage and refuse treatment is relatively good in Ma-Kung. The feces treatment, on the contrary, is rather deficient. Each market area is equipped with one public lavatory, which is easily contaminated due to poor supervision. In Ma-Kung, the night-soil of some homes along the main streets is collected by a suction truck, that is not available for most of the homes situated along the narrow lanes, where the truck is unable to enter. During the farming season, the farmers come into the city to individually collect the night-soil ; while during the rest of the year, the night-soil stagnates, occasionally flooding-over after a rain shower, and the stench remains.

In the rural areas, the people have no privies, and utilize the night-soil directly as fertilizer, hence some areas such as T'sai-Yuan, Shih-Ch'uan and Wu-K'an etc., where vegetables are raised, the Parasitic diseases, especially the Ancylostomiasis, prevail. Pigsties are very dirty. Some people raise pigs and chickens under the bed, which causes frequent cases of putrid inflammation, such as Panaritium gangrenosa among women.

F. Medical conditions :

In addition to the public hospital, i.e., Taiwan provincial Peng-Hu Hospital, with modern equipment and 60 beds in Ma-kung, there is also the Peng-Hu Health Center, superintending the health administration of the whole prefecture with 6 Health Stations distributed in each of six rural areas.

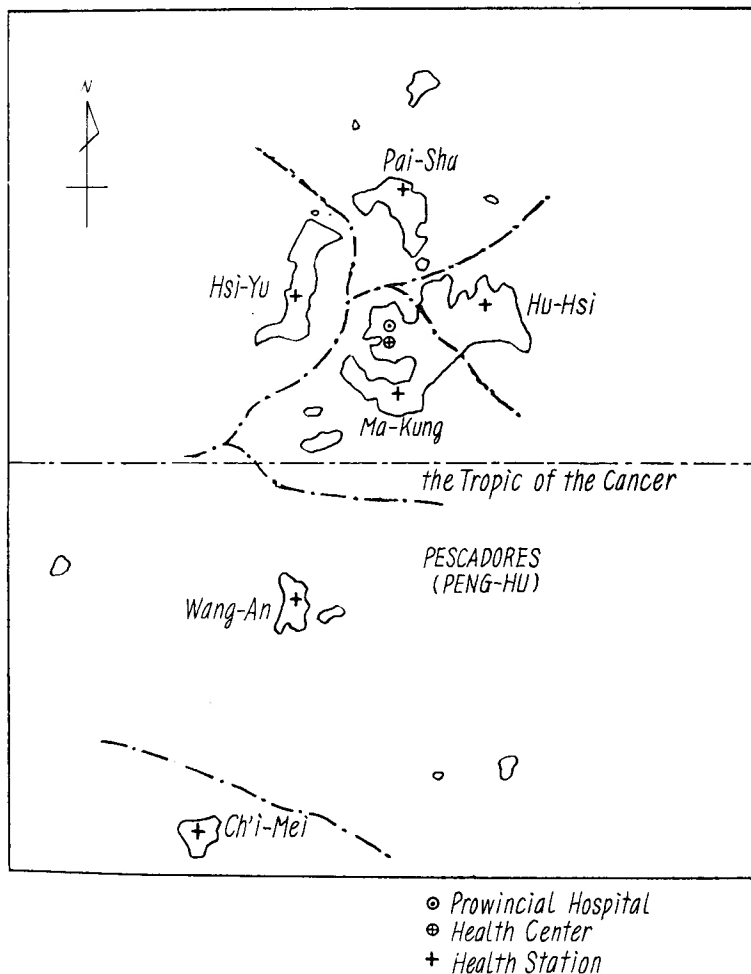
There are 25 doctors (March, 1960), 1 physician for 5,000 people ; 1 surgeon, 1 obstetrician-gynecologist, 1 pediatrician and 1 dentist for 50,000 people ; and 1 oto-rhino-laryngist for 100,000 people respectively. As for ophthalmologist, though the diseases of eyes are so frequent, there is only 1 technician for total population.

III. STATISTICAL CLASSIFICATION OF THE DISEASES

98,375 patients were treated at the Taiwan Provincial Peng-Hu Hospital and the P'ing-Min Hospital in Ma-Kung, from April 1, 1952 to March 31, 1960. From these, about one hundred thousand cases, the statistical classification by international list, some-

what modified by the author, was done.

Fig. 1. Map of the Pescadores



A. Classification by sex

The males were 69,038 or 70%, and the females were 29,337 or 30%. In general, morbidity of the males was higher than that of the females, except in cases of Ancylostomiasis, Ascariasis, Erysipelas, Measles, Struma, and Anemia.

B. Chronological transition of the patients

The maximum number of the patients was in 1952, and from 1953 to 1958 no great difference, then from 1959 it increased again. Malaria, Trachoma, Filariasis and Syphilis have been decreasing after the careful control survey by the Government, while Rheumatism, Hepatitis, Peptic ulcer, Acute Poliomyelitis and Allergic diseases have been increasing gradually during the past several years.

C. Relation to the seasons

Most of the diseases occur in summer ; the maximum number is in August, the

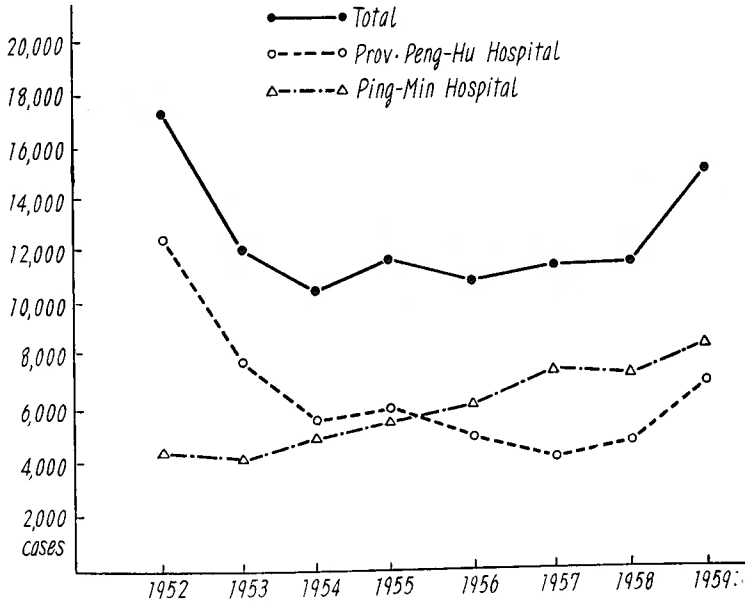
Table 1. Statistics of the total cases (April 1, 1952–March 31, 1960)

		Male	Female	Total	Rate (%)
Total	Number	69,038	29,337	98,375	100.0
	Rate (%)	70.0	30.0	100.0	
Taiwan Provincial Peng-Hu Hospital	Number	40,811	10,695	51,506	52.4
	Rate (%)	80.0	20.0	100.0	
P'in-Min Hospital in Ma-Kung	Number	28,227	18,642	46,869	47.6
	Rate (%)	60.0	40.0	100.0	

Table. 2. Chronological transition of the patients.

	Peng-Hu Hospital			Ping-Min Hospital			Total		
	m.	f.	t.	m.	f.	t.	m.	f.	t.
1952	9,893	2,567	12,460	2,883	1,851	4,734	12,786	4,418	17,194
1953	6,412	1,430	7,842	2,597	1,549	4,146	9,009	2,979	11,988
1954	4,443	979	5,422	3,048	1,812	4,860	7,491	2,791	10,282
1955	5,013	760	5,773	3,528	2,229	5,757	8,541	2,989	11,530
1956	3,921	779	4,700	3,493	2,404	5,897	7,414	3,183	10,597
1957	2,851	1,062	3,913	4,354	2,797	7,151	7,205	3,859	11,064
1958	3,388	1,092	4,480	3,821	2,721	6,542	7,209	3,813	11,022
1959	4,890	2,026	6,916	4,503	3,279	7,782	9,393	5,305	14,698
Total	40,811	10,695	51,506	28,227	18,642	46,869	69,038	29,337	98,375

Fig. 2 Chronological Transition of the Patients in 8 Years.



minimum in February. Measles, Varicella, Acute Poliomyelitis etc. were prevalent in spring ; Enteritis, Scrub typhus, Wound infections and Injury in summer ; while Trachoma, Rheumatism. Asthma bronchiale and Bronchitis were prevalent in autumn and winter.

Table 3. Relation to the month and season

		Spring			Summer			Autumn			Winter		
		Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.
Male	n.	2131	1986	2867	3061	2981	3205	2586	2233	1856	1784	1822	1715
	%	4.55	4.23	6.11	6.54	6.36	6.84	5.51	4.77	3.96	3.81	3.88	3.66
Female	n.	1448	1247	1803	2085	2111	2147	1679	1404	1167	1191	1185	1175
	%	3.09	2.65	3.85	4.45	4.51	4.58	3.59	2.99	2.48	2.55	2.53	3.51
Total	n.	3579	3233	4670	5146	5092	5352	4265	3637	3023	2975	3007	2890
	%	7.64	6.88	9.96	10.99	10.87	11.42	9.10	7.76	6.44	6.36	6.41	6.17
		11482			15590			10925			8872		
		24.48%			23.28%			23.20%			18.94%		

Fig. 3 The number of the patients in each month

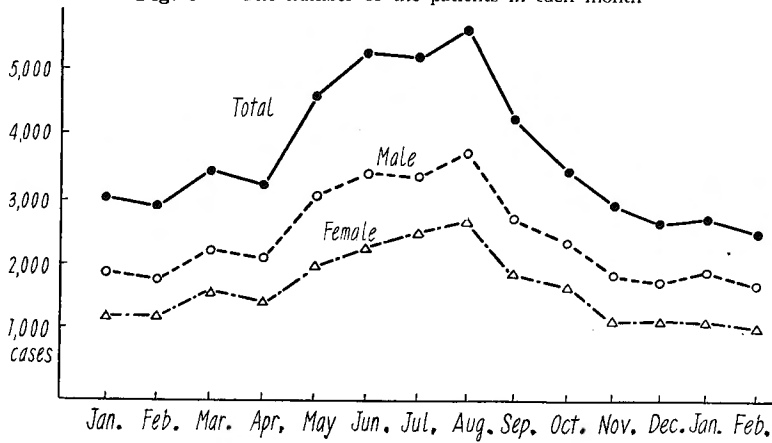
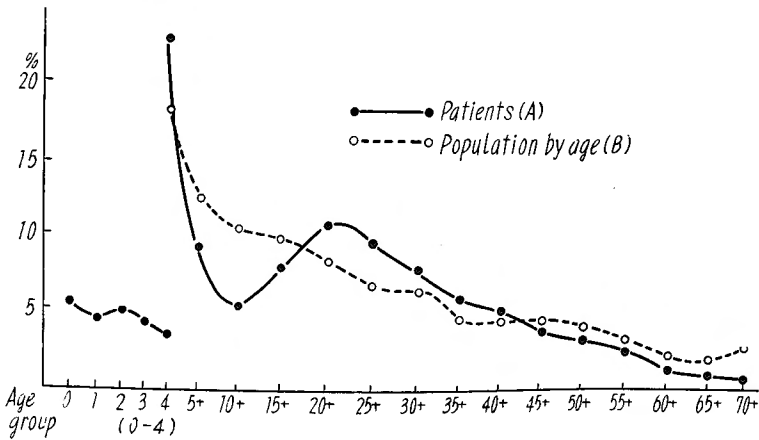


Fig. 4 Age incidence of the patients in the Pescadores.



D. Age incidence of the patients

The highest percentage in age of the total patients is between the age of 0-4, the morbidity curve (A) declines suddenly and reaches the ages of 10-14, and increases again to the peak at the ages of 20-24, then it decreases gradually to the ages of 70 and over.

E. Diseases of the greatest incidence

The 20 most numerous diseases in the Pescadores were :

1. Rhumatism	7843 (8.0%)	11. Otitis media	2358 (2.4%)
2. Common cold	6782 (7.0%)	12. Ancylostomiasis	1620 (1.6%)
3. Wound	6142 (6.3%)	13. Conjunctivitis	1583 (1.6%)
4. Bronchitis	5795 (5.9%)	14. Eczema, Dermatitis	1447 (1.5%)
5. Abscess, Phlegmon	4437 (4.5%)	15. Infected wound	1251 (1.3%)
6. Enteritis	4387 (4.4%)	16. Ascariasis	1246 (1.3%)
7. Trachoma	4316 (4.4%)	17. Furuncle, Carbuncle	1242 (1.3%)
8. Gastritis	4174 (4.3%)	18. Angina	1192 (1.2%)
9. Pulmonary T. B.	2575 (2.6%)	19. Amebic dysentery	1125 (1.1%)
10. Hepatitis	2548 (2.6%)	20. Polymyositis purulenta	1017 (1.0%)
Total	48999 (50%)	Total	14081 (14.3%)

and these 20 diseases include nearly 2/3 of the all patients.

Table 4. Diseases of the Greatest Incidence in Physical Disorders.

	male	female	total	rate to the all cases
(1) Diseases of Digestive Organs	12807	5359	18166	(18.5%)
1. Enteritis	2973	1414	4387	(24.0%)
2. Gastritis	2825	1349	4174	(23.0%)
3. Hepatitis	1832	716	2548	(14.0%)
(2) Diseases of Respiratory Organs	10102	3997	14088	(14.3%)
1. Common cold	5071	1711	6782	(48.1%)
2. Bronchitis	4044	1751	5795	(41.1%)
3. Asthma bronchiale	330	238	568	(4.0%)
(3) Diseases of Eyes	9464	3246	12710	(12.9%)
1. Trachoma	3024	1292	4316	(33.9%)
2. Conjunctivitis	1161	422	1583	(12.4%)
3. Keratitis	672	320	992	(7.8%)
(4) Suppurative Inflammation	5040	3295	8335	(8.5%)
1. Abscess	2708	1729	4437	(53.2%)
2. Furuncle, Carbuncle	782	460	1242	(14.9%)
3. Polymyositis	552	465	1017	(12.3%)
(5) Rheumatic Diseases	6082	1761	7843	(8.0%)
1. Neuralgia	4546	1122	5668	(72.3%)
2. Polyarthrititis	1119	459	1578	(20.1%)
3. Rheumatic fever	418	180	597	(7.6%)
(6) Injury	5284	1531	6815	(7.0%)
1. Wound	4800	1342	6142	(90.1%)
2. Contusion	208	99	307	(4.5%)
3. Burns	162	51	213	(3.2%)
(7) Skin Diseases	3081	1117	4198	(4.3%)

	1. Prurigo	1230	279	1509	(36.0%)				
	2. Eczema, Dermatitis	987	460	1447	(34.4%)				
	3. Urticaria	179	130	309	(7.4%)				
(8)	Acute Infectious Diseases					2581	1345	3926	(4.0%)
	1. Amebic Dysentery	794	331	1125	(28.6%)				
	2. Influenza	512	274	786	(20.0%)				
	3. Filariasis	429	92	521	(13.3%)				
(9)	Diseases of Ears					3008	815	3823	(3.9%)
	1. Otitis media	430	574	2358	(61.7%)				
	2. Otitis externa	430	134	564	(14.7%)				
	3. Otitis interna	78	6	84	(2.2%)				
(10)	Intestinal Parasitosis					1180	1839	3019	(3.0%)
	1. Ancylostomiasis	482	1138	1620	(53.6%)				
	2. Ascariasis	615	631	1246	(41.3%)				
	3. Oxyuriasis	58	65	123	(4.1%)				
(11)	Tuberculosis					2404	576	2980	(3.0%)
	1. Pulmonary T.B.	2102	473	2575	(21.3%)				
	2. Lymphadenitis.	106	43	149	(5.0%)				
	3. Arthritis tbc.	60	21	81	(2.7%)				
(12)	Diseases of Circulatory Apparatus					2053	799	2852	(3.0%)
	1. Hypertention	474	137	611	(21.5%)				
	2. Diseases of Vein	440	54	494	(17.3%)				
	3. Endocarditis chr.	66	43	109	(3.8%)				
(13)	Diseases of Nose & Larynx					1179	344	1523	(1.5%)
	1. Rhinitis	703	197	900	(59.1%)				
	2. Laryngitis	139	59	198	(13.1%)				
	3. Empyema	82	31	113	(7.4%)				
(14)	Gynecological Diseases							1298	(1.3%)
	1. Endometritis			574	(44.2%)				
	2. Mastitis			324	(25.0%)				
	3. Adnexitis			263	(20.3%)				
(15)	Venereal Diseases					862	85	947	(1.0%)
	1. Syphilis	369	39	408	(43.1%)				
	2. Gonorrhoea	329	28	357	(37.7%)				
	3. Soft Chancre	110	9	119	(12.6%)				
(16)	Leprosy					73	52	125	(0.1%)
	1. Tuberculoid type	26	28	54	(43.2%)				
	2. Lepromatous //	26	17	43	(34.4%)				
	3. Borderline //	16	5	21	(16.8%)				
(17)	Diseases of Liver & Gallbladder					2434	1118	3552	(3.7%)
	1. Hepatitis	1832	716	2548	(71.7%)				
	2. Cholelodycystitis	394	310	704	(19.8%)				
	3. Livercirrhosis	136	36	172	(4.8%)				
(18)	Diseases of Oral Cavity					1111	684	1795	(2.0%)
	1. Angina	740	452	1192	(66.4%)				
	2. Tonsilhypertrophia	302	107	409	(22.8%)				
	3. Stomatitis	181	98	279	(15.1%)				
(19)	Diseases of Urogenital Organs					1335	358	1693	(1.7%)
	1. Nephritis	190	190	380	(22.4%)				
	2. Cystitis	219	151	370	(21.8%)				
	3. Balanitis & Phimosis		588		(34.7%)				
(20)	Malignant tumor					132	123	255	(0.26%)
	1. Hepatom	50	17	67	(26.2%)				
	2. Colon cancer	19	9	28	(10.9%)				
	3. Stomach cancer	12	12	24	(9.8%)				

(21) Diseases of Blood & Spleen				275	271	546	(0.6%)
1. Anemia	216	251	467 (85.5%)				
2. Purpura	25	7	32 (5.9%)				
3. Splenomegalia	25	5	30 (5.5%)				
(22) Disturbance of Metabolism & Malnutrition				388	149	537	(0.5%)
1. Beriberi	158	46	204 (38.0%)				
2. Other Avitaminosis	162	72	234 (43.6%)				
3. Diabetes Mellitus	57	26	83 (15.5%)				
(23) Diseases of Endocrine Organs				34	68	102	(0.1%)
1. Struma simplex	17	59	76 (74.5%)				
2. Basedow's Disease	0	6	6 (5.9%)				
3. Adisson's Disease	1	0	1 (1.0%)				
(24) Intoxication				76	30	106	(0.1%)
1. Food intoxication	63	24	87 (82.1%)				
2. CO intoxication	4	5	9 (8.5%)				
3. Alcoholism	4	1	5 (4.7%)				
(25) Diseases of Nervous System				147	57	204	(0.2%)
1. Apoplexia	29	18	47 (23.0%)				
2. Epilepsia	38	10	48 (23.0%)				
3. Meningitis (non TB)	16	5	21 (20.6%)				
(26) Obstetrical Diseases					340		(0.3%)

IV. PECULIAR DISEASES IN THE PESCADORES

A. Filariasis

500 patients with clinical signs were treated at the Ping-Min Hospital, of which 51 cases (10.2%, male 33, female 18) were of the First invasion ; 79 cases (15.8%, male 32, female 47) were Lymphadenitis and Lymphangitis ; 243 cases (48.6%, male only) were Orchitis ; 76 cases (15.2%, male only) were Hydrocele and Chylocele ; 26 cases (5.2%, male 16, female 10) were Chyluria ; 5 cases (1.0%, male 3, female 2) were Hematochyluria ; 16 cases (3.2%, male 7, female 9) were Elephantiasis of the legs ; and 4 cases (0.8%, male only) were Elephantiasis of the scrotum.

Chyluria → Hematochyluria

The first invasion → Lymphadenitis → Elephantiasis of the legs

Orchitis → Chylocele → Hedrocele

Elephantiasis of the scrotum

The course of this chronic disease continues for the whole life, *Microfilaria* was discovered in the urine of the Chyluria patients, and the blood of the first invasion, Lymphadenitis, and Orchitis patients, even in the daytime when the provocation with Hetrazan was done, but not in the Hydrocele and Elephantiasis patients. In summer, when many mosquitoes (*Culex fatignas* specifically) are seen, the first invasion patients make up the highest percentage, but in the other cases no great influence of the season was seen. Most of the first invasion patients, Chyluria patients, and Orchitis patients are in the 20-29 age group ; Lymphadenitis patients and Hydrocele patients are in the 30-39 age groups ; but patients with Elephantiasis of the legs and the scrotum are in the 40-49 age group and the 50-59 age group respectively.

When the *Microfilaria* were discovered, most of the patients, such as the first invasion,

Orchitis, Lymphadenitis and Chyluria were effectively treated with Hetrazan, but other cases were not affected ; and not of them were operated upon.

B. Scrub typhus

Scrub typhus is a self-limited febrile illness of two weeks' duration caused by *Rickettsia Tsutsugamushi*, transmitted by chiggers and distributed widely in the Asiatic-Pacific area.

In Taiwan it is found in Tai-Tung and Peng-Hu (Pescadores). Scrub typhus in Peng-Hu is higher in Females than in Males, 60% and 40% respectively. The highest prevalence is between the age of 5-14 (40%). Whereas, it is between the ages of 20-30 in Taiwan. The primary skin lesion (eschar) is found in the height of about 1 meter of the body, according to the height of the millet, for after the heavy rain chiggers (*Tsutsugamushi*) climb up to the tip of the millet. Therefore, the scrotum and inguinal part of the adults, under the arms of the schoolboys and girls, and the retroauricular part of the children are the most prevalent places of the primary lesion.

The occurrence of scrub typhus is limited to the five months (from May through September), when the rainfall is the greatest.

The abrupt drop of Scrub typhus in morbidity and mortality during the last 8 years was due to the adequate medical and environmental treatment since 1952.

Chloramphenicol and Aureomycin were effective for the treatment.

C. Leprosy

Superstitions and suspicions may be among the main reasons that the Pescadores have a proportionately high incidence of Leprosy. Though, of course, crowded living conditions, malnutrition, and poor sanitation also contribute to the problem. At present, about 250 cases are known (166 of these have registered at the local outpatient clinic during the past five years). Most of the cases are found among the local population ; but, there are a number of "imported" cases.

At present, there are more males than females. The incidence is highest in the age group between 20 years and 40 years. The main occupations of the people of the Pescadores are farming and fishing ; the disease is most prevalent in these two groups.

Leprosy is classified as follows : Lepromatous, 59 cases or 39.1% ; Tuberculoid, 68 cases or 45.0% ; Borderline, 24 cases or 15.9% ; and not yet determined, 7 cases. (June 30, 1960)

D. Polymyositis purulenta.

In recent 8 years, there were 5,756 cases of suppurative inflammation. Among them Polymyositis and Iliopsoitis were 997 cases (17.32%) and 20 cases (0.35%) respectively. Most of them were in the 5-9 age group, and 15-19 group, and seen in summer ; these diseases seemed to increase from year to year. Under 19 years of age, more males suffered from these diseases than females, but over 20 years of age it was the contrary. *Staphylococcus aureus* was the only infectious agent of these diseases and other mixed infections were not discovered.

These diseases often seen in the several places of the large muscles, and as many as 21 places were seen in one patient. 411 cases (40.17%) were operated upon and the other 586 cases were treated with Sulfa-drugs and Antibiotics, and all patients recovered

without disturbance of motility.

Undernutrition (especially B₁ avitaminosis) and bad environmental hygiene are the most important factors causing these diseases in these Islands.

V. INFECTIOUS DISEASES

A. Acute infectious Diseases

From April 1952 to March 1960, there were 3,926 cases of infectious diseases, or 4% of the total patients (98,375 cases). Among them, Amebic dysentery were 1,125 cases (28.6%), Influenza 786 cases (20%), Filariasis 521 cases (13.3%), Erysipelas 154 cases (8.4%), Whooping cough 231 cases (5.9%), Measles 194 cases (4.9%), Varicella 155 cases (2.4%), Acute poliomyelitis 94 cases (2.4%), Scrub typhus 86 cases (2.2%), Tetanus 72 cases (1.9%), Rubella 71 cases (1.8%), Mumps 71 cases (1.8%), Diphtheria 61 cases (1.6%), Typhoid fever 53 cases (1.4%), Malaria 33 cases (0.8%), Bacillary dysentery 28 cases (0.7%), Epidemic cerebro-spinal meningitis 12 cases (0.3%), Paratyphoid fever 3 cases (0.1%).

- 1) Amebic dysentery in the Pescadores is the most common diseases, it occurs during the whole year, especially in summer, caused by drinking unboiled water, or eating popsicles, and is prevalent in the ages between 0-4 (37.4%), and in the ages between 20-24 (10.8%, especially among the fishermen). After incomplete treatment, some of them developed liver abscess, and there were 22 cases of liver abscess which needed surgical treatment.
- 2) 786 cases of Influenza (20% of the acute infectious disease) with good prognosis were seen in May and June 1957, coinciding with the world epidemic.
- 3) Measles were more prevalent in females than males, and it is noticeable that the diseases occurred also in aged men and women, who had no chance to depart from isolated Islands because of difficult transportation, and had acquired no immunity against Measles.
- 4) Acute poliomyelitis seems to be increasing gradually during these years (1955-1959) -similar to increase rate in Taiwan. Most of them were seen in the ages between 1-3.
- 5) Malaria was never seen among the local people, though some newcomers suffered from this disease (only 33 cases), but after 1957 there were no cases.
- 6) Beside the epidemics of Rubella in 1952 and again in 1958, there were no unusual infectious diseases here.

B. Tuberculosis

- 1) There were 2,586 cases of Pulmonary tuberculosis (86.7%) and 394 cases of Extrapulmonary tuberculosis (13.3%). Among Pulmonary tuberculosis 3 cases were complicated with Laryngitis tuberculosa.
- 2) Pulmonary tuberculosis in the Pescadores is higher in males than in females; 81.9% and 18.1% respectively, and the highest prevalence is between the ages of 25-29. It was noted that the severe cases have decreased, while the mild cases have increased. General speaking, the incidence of Pulmonary tuberculosis has been decreasing after

chemotherapy of the past several years.

- 3) Among Extrapulmonary T. B., Lymphadenitis tuberculosa is the most common, having 149 cases or 5% of Tuberculosis, beside Lymphadenitis colli tuberculosa, there were seen 15 cases of Lymphadenitis axillaris tuberculosa after Tuberculin test or Katze's vaccination in the age group of 0-4. The next most prevalent was Tuberculosis of the bones and joints, having 81 cases or 2.7%. Among them Coxitis tuberculosa were 37 cases and Spondylitis tuberculosa were 23 cases. Because of the ignorance of the local people, the treatment of these diseases was difficult.

C. Venereal Diseases

947 patients of Venereal diseases were treated in the past 8 years, (1% of the total patients), of which 408 were Syphilis (43.1%), 357 were Gonorrhoea (37.7%), 119 were Soft chancre (12.6%), and 63 were Lymphogranuloma inguinale (6.6%). More males than females suffered from these diseases. (862 : 85 = 10 : 1).

Syphilis and Soft chancre have decreased in late years, but Gonorrhoea and Lymphogranuloma inguinale have increased from year to year. V. D. R. L. and Kahn tests were done on 40,058 people, from November 1954 to December 1959, of which 3,190 were positive. (7.95%), while in a limited area (Hsi-Yu Island) 3,322 people were tested, of which 263 (7.91%) were positive.

Most of the venereal diseases were seen in winter, since many fishermen were on shore because of bad weather. The highest percentage of Gonorrhoea was found in the age group of 30-34, but other types (Syphilis, Soft chancres and Lymphogranuloma inguinale were found in the age group of 25-29.

V. D. Control Survey in the Pescadores has succeeded in finding many of these diseases, but because of many complicated conditions in the patients, the treatment didn't give good results.

There are more than 300 prostitutes in Ma-Kung, Hu-Hsi, Pai-Sha and Hsi-Yu Islands. They are the main source of venereal diseases. Sarvarsan, Antibiotics and Sulfadugs were used for the treatment, and some cases of Lymphogranuloma were operated upon. But most patients were not radically treated, so many cases of relaps were seen.

D. Intestinal worms

As in other villages of Taiwan, intestinal worms is the greatest problem here, and the infection rates of the Ascaris and Ancylostoma are 78.9% and 6.7% respectively.

But Ancylostoma was found much more than Ascaris clinically. In the past 8 years (1952-1959), there were 3,019 cases of the intestinal worms (3%) among them ; Ancylostomiasis 1,620 cases (53.6%) ; Ascariasis-1,246 cases (41.3%) ; Oxyuriasis-123 cases (4.1%). ; and other parasites-30 cases (1.0%).

Ancylostomiasis and Ascariasis have increased in the last years, and showed the highest percentage in August.

Most Ascariasis was found in the age group below 14 years, which showed 80% of all Ascariasis found. On the contrary, Ancylostomiasis were found in the age group above 15 years ; and the highest is between the ages of 20-29, which showed 35% of all the hook-worm patients. More females suffered from Ancylostomiasis than males, but no di-

ference was seen in Ascariasis.

The rural areas, such as Ts'ai-Yuan, Shih-Ch'uan, An-T'eh, Wu-K'an, are the places, where most of the Ancylostomiasis and Ascariasis were seen. Anemia of extreme grade is the important sign of Ancylostomiasis and abdominal pains are that of Ascariasis.

VI. SUMMARY

To clarify the specialty of the diseases and to manifest their incidence, the statistical classification was done about 98,375 cases, treated at the Pescadores Islands.

A. Statistical classification

- 1) Among all cases, the males 70% and the females 30%, morbidity of the males was higher, except in Ancylostomiasis, Ascariasis, Erysipelas, Measles and Anemia.
- 2) Malaria, Trachoma, Filariasis and Syphilis have been decreasing, while Rheumatism, Hepatitis, Peptic ulcer, Acute poliomyelitis and Allergic diseases have been increasing.
- 3) Measles, Varicella, Acute poliomyelitis etc. were prevalent in spring; Enteritis, Wound infection, Injury and Scrub typhus in summer; Trachoma, Rheumatism, Asthma bronchiale and Bronchitis in autumn and winter.
- 4) The highest percentage of the total patients in age is between the ages of 0-4, and next in the ages of 20-24.
- 5) The 20 most numerous diseases were :
Rheumatism (8%), Common cold (7%), Wound (6.3%), Bronchitis (6%), Abscess and Phlegmon (4.5%), Enteritis (4.4%), Trachoma (4.4%), Gastritis (4.2%), Pulmonary T. B. (2.6%), Hepatitis (2.6%), Otitis media (2.4%), Ancylostomiasis (1.6%), Conjunctivitis (1.6%), Eczema and Dermatitis (1.5%), Infected wound (1.3%), Ascariasis (1.3%), Furuncle and Carbuncle (1.3%), Angina (1.2%), Amebic dysentery (1.1%), Polymyositis purulenta (1%).
These 20 diseases include nearly 2/3 of the all cases. Therefore it may be concluded that the bad weather, bad hygiene and the especially bad living conditions in the Pescadores were the most important factors for causing these diseases.

B. Peculiar diseases.

- 1) Filariasis
Infection rate is about 6%, and after control survey it seemed to be decreasing gradually.
- 2) Scrub typhus
It occurs in summer after heavy rain, and primary skin lesion is found in the height of 1 meter of the body, according to the millet.
- 3) Leprosy
It is estimated about 800 cases of Leprosy. The known cases in April 1959 were 250. Crowded living condition, malnutrition, poor sanitation may be the main influencing factors.
- 4) Polymyositis
Most prevalent in the ages of 5-9, more males under 19 years, but more females over 20 years of age, it is considered that B₁ Avitaminosis plays an important role.

C. Infectious diseases

- 1) Amebic dysentery is the most common, prevalent in the ages of 0-4 and 20-24. Malaria was never seen among the local people. It is noticeable that Measles occur also in aged men and women.
- 2) Severe cases of Pulmonary T. B. have decreased, while mild cases have increased. T. B. of Bones and Joints were 2.7% of all T. B. cases and because of the ignorance of the local people, it was difficult to treat them.
- 3) Among Venereal diseases (1% of total cases), syphilis occupied 43%, Gonorrhoea 38%, Soft chancre 12%, Lymphogranuloma 7 %, Positive rate of V. D. R. L. and Kahn tests were about 8 %.
- 4) Infection rates of Ascaris and Ancylostoma are 78.9% and 6.7%, but Ancylostomiasis was found much more than Ascariasis clinically. Most Ascariasis was found below 14 years of age, while Ancylostomiasis was above 15 years and the highest in the ages of 20-29. More females suffered from the both.

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和 文 抄 録

澎湖島の疾病に関する統計的研究

京都大学医学部整形外科教室（指導：近藤鋭矢教授）

台湾省台南市 蘇 銀 河

澎湖島は四面を海に囲まれた農作物に乏しい不毛の地で、季節風が烈しく、種々の生活条件は他処よりも悪い。著者は約15年間にこの島で診療に従事し、この島における疾病の特殊性について、些かの知見を得たので、此の地における気候の特異性と悪劣な生活環境

が疾病に如何なる影響を及ぼすかを究明する目的で、最近八年間（1952年4月—1960年3月）、台湾省立澎湖医院及び馬公平民医院で診察した、98,375例の疾病について統計的観察を行なつたので、茲にその結果を報告する。

A 統計的觀察

1) 男70%, 女30%で, 男尊女卑の觀念が女の就醫率を低くしている。只, 腸内寄生虫, 恙虫病, 貧血症は女に多い。男は漁業に従事し, 畑仕事は女がしている為である。

2) 梅毒, トラコーマ, フィラリヤ症等は減少しつつあるが, リューマチ, 肝炎, 消化性潰瘍, 多発性筋炎及びアレルギー疾患は近年とみに増加している。

3) 麻疹, 水痘, 急性灰白質炎の如き伝染病に春先に多く, 台湾本島の流行よりは一カ月程遅れる。夏には腸炎, 外傷, 化膿性疾患及び恙虫病等が多く見られ, トラコーマ, 気管支喘息, 気管支炎及び肺炎等は季節風の烈しくなる秋から冬にかけて増えてくる。

4) 0~4歳の幼児期の罹患率が一番高く, その次は外界との接触の多い20~24歳の青年で, 学齡期の児童(5~19歳)は低い。

5) 罹患率の高い疾病の順位は, リューマチ(8%), 感冒(7%), 外傷(6.3%), 気管支炎(6%), 膿瘍及び蜂窩織炎(4.5%), 腸炎(4.4%), トラコーマ(4.4%), 胃炎(4.2%), 肺結核(2.6%), 及び肝炎(2.6%)であり, この十種の疾病は全症例の50%を占める。次ぎには, 中耳炎(2.4%), 十二指腸虫症(1.6%), 結膜炎(1.6%), 湿疹及び皮膚炎(1.5%), 創傷化膿(1.3%), 蛔虫症(1.3%), 癌及び癰(1.3%), アメーバ性赤痢(1.1%), 多発性筋炎(1%)の順となっており, 其の他の疾病は夫々全症例の1%以下を占めるにすぎない。以上の二十種の疾病は全症例の2/3を占める。

B 特殊疾病

1) フィラリヤの感染率は約6%で, 臨床例は全症例の0.5%を占める。初期侵襲に始まり, 淋巴腺炎や睾丸炎と発作を反復して, 陰囊水腫, 乳糜尿, 象皮病と慢性の経過を辿る。

2) 恙虫病は5月から9月の間に限られ, 大雨の後

に発生し, 女に多く, 虫の螯口結痂部は, 高粱の葉梢の高さに一致して, 身体の約1メートルの高さの所に発見される。台東では20~30歳の間に多いが, 澎湖島では5~14歳の間に多く, 40%を占める。

3) 癰病は漁民の間に, 特に20~40歳の間に多く見られ, 特に Tuberculoid type が45%を占め一番多い。

4) 多発性筋炎は5~9歳の小児に多く, 14歳以下の児童は全症例の70%を占める。19歳以下では男に多いが20歳以上では女の症例が多い。栄養失調殊にB₁欠亡が関係ある様に思われる。

C 伝染病

1) 1.アメーバ赤痢は急性伝染病の28.6%を占め, 最も多い。その中の0.2%に肝臓膿瘍を併発している。麻疹は男よりも女にやや多く, 小さい離島では青年や老人にも発生流行する事は注意を要する。急性灰白質炎(脊髓性小児麻痺)は近年増えつつあり, 外来者に時々見られたマラリアは1957年以後は跡を絶っている。

2) 肺結核は軽症の例が増え, 重症例は減りつつある。肺外結核としては淋巴腺結核が多く, 骨関節結核は之に次ぐ。

3) 性病の中では梅毒が一番多く(43.1%), 住民のV.D.R.L.血清反応の陽性率は8%で台湾本島よりずっと高い。梅毒及び軟性下疳が減少している一方, 淋病及び第四性病は増えつつある。

4) 腸内寄生虫の感染率は蛔虫が十二指腸虫よりも高いが(78.9%及び6.7%), 臨床症状を呈するものは, 十二指腸虫の方が多く, 腸内寄生虫症の53.6%を占める。蛔虫症は14歳以下の児童に80%, 十二指腸虫症は20~29歳の間に多く35%を占める。女の罹患率が高い。

附記:

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